

ABSTRACT OF THE DISCLOSURE

A method of recycling bonded fibrous materials, the method includes the steps of: providing pieces of bonded fibrous materials, the pieces having sizes that are adapted for suspension in a liquid; suspending the discrete pieces of bonded fibrous materials in a liquid; applying mechanical work to the liquid suspension of discrete pieces to generate hydraulic pressure and mechanical shear stress conditions sufficient to hydraulically fragment the bonded fibrous materials into fibers and fiber-like components; and separating substantially individual fibers and fiber-like components from the liquid. The method is used to produce recycled synthetic fibers and fiber-like materials that have at least one thread element composed of synthetic material having at least one irregular distortion generated by hydraulic fracture of the thread element to separate it from a bonded fibrous material while the bonded fibrous material is suspended in a liquid.